

CLAIMS

[0071] The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. Apparatus for securing a firearm that has a firing chamber, barrel, muzzle, and trigger guard, comprising:

a firing chamber plug that is sized and shaped for insertion into the firing chamber to thereby prevent loading live ammunition in the firing chamber, said plug having an engagement surface; and

a barrel rod sized and shaped for extending from the muzzle, through the barrel, and to the plug in the firing chamber, said barrel rod having an engagement structure adapted to engage said engagement surface on the plug, and said barrel rod being long enough to extend longitudinally outward from the muzzle when the engagement structure engages said engagement surface so as to be visible to a person observing the firearm.

2. The apparatus of claim 1, wherein the plug has an axial bore extending longitudinally into the plug and the engagement surface includes internal threads in said bore, and wherein the engagement structure comprises external threads on the barrel rod that are sized and shaped to screw into the internal threads in said bore.

3. The apparatus of claim 2, including a knob on an end of the barrel rod outside the muzzle, wherein the knob has a transverse hole extending therethrough, a cable extending through the hole in the knob and being long enough to extend to the trigger guard, and a lock device configured to lock the cable to the trigger guard.

4. The apparatus of claim 1, wherein the engagement surface includes a shoulder in a bore extending into the plug, and wherein the engagement structure includes a ball that is moveable radially in relation to the barrel rod into contact with the shoulder.

5. The apparatus of claim 4, wherein the bore in the plug is sized and shaped to receive a proximal end of the barrel rod with said ball;

6. The apparatus of claim 5, including a cam surface on the barrel rod adjacent the ball configured to cam the ball radially outward as the ball rolls on the cam surface.

7. The apparatus of claim 6, including a seat surface extending from the cam surface, said seat surface being positioned to hold the ball partially protruded radially from the barrel rod into contacting alignment with the engagement surface.

8. The apparatus of claim 7, wherein the barrel rod includes an external sheath extending from a position outside the barrel, through the barrel, and into the bore in the plug, and an inner shaft extending longitudinally through the external sheath from a distal end longitudinally outward from the external sheath and to a proximal end in the bore in the plug, said cam surface and seat surface being formed in the inner shaft adjacent the proximal end of the inner shaft so that longitudinal movement of the inner shaft in relation to the outer sheath cams the ball radially into or out of contactable alignment with the engagement surface.

9. The apparatus of claim 8, including a transverse hole through the inner shaft adjacent the distal end of the inner shaft and adjacent the distal end of the outer sheath in a position such that a lock component extending through the hole abuts the distal end of the outer sheath to prevent longitudinal movement of the inner shaft in relation to the outer sheath in a direction that causes the cam surface to collapse the ball radially out of engageable alignment with the engagement surface.

10. The apparatus of claim 1, wherein the engagement surface includes a slot end of a slot having longitudinal and transverse portions in the plug, and the engagement structure comprises transversely extending protrusions adjacent a proximal end of the barrel rod sized to extend from a bore in the plug into said longitudinal and transverse portions of said slot to said slot end.

11. The apparatus of claim 10, wherein the barrel rod includes an inner shaft and said protrusions extend in diametrically opposite directions from a proximal end portion of the inner shaft and a tool engaging surface in a distal end portion of the inner shaft, an outer tube positioned telescopically over the inner shaft and extending from a distal end of the outer tube outside the barrel to a proximal end of the outer tube inside the barrel, and an elongated tool that is extendable through the outer tube into engagement with the tool engaging surface in the distal end portion of the inner shaft.

12. The apparatus of claim 11, including a transverse hole through the outer tube adjacent the distal end of the outer tube, and a lock device that is extendable through the hole to block extension of the tool through the outer tube to the inner shaft.

13. A method of securing a firearm that has a firing chamber, a barrel, a muzzle, and a trigger guard, comprising:

positioning a plug in the firing chamber;

extending a barrel rod from outside the muzzle, through the barrel, and to the plug in the firing chamber;

releaseably connecting the barrel rod to the plug in a manner that requires a particular manual manipulation of the barrel rod for disengaging the barrel rod from the plug; and

locking the barrel rod to the plug by securing the barrel rod in a manner that prohibits said particular manual manipulation of the barrel rod.

14. A system for locking a firearm, the system comprising:

a barrel rod comprising a threaded portion, wherein the barrel rod is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the threaded portion of the barrel rod.

15. The system of claim 14 wherein the barrel rod comprises a hole, the system further comprising:

a cable comprising a first permanent loop at a first end of the cable and a second permanent loop at a second end of the cable, wherein the cable has a length sufficient to form a third loop between the barrel rod and a trigger guard of the firearm; and

a lock configured to lock together the first permanent loop and the second permanent loop of the cable to lock the third loop formed between the barrel rod and the trigger guard.

16. The system of claim 15 wherein the cable passes through the hole and the lock locks together the first permanent loop, the second permanent loop, and the trigger guard.

17. The system of claim 15 wherein the first permanent loop passes through the trigger guard and the lock locks together the first permanent loop, the second permanent loop, and the hole.

18. The system of claim 15 wherein the cable passes through the hole and the first permanent loop passes through the trigger guard, and the lock locks together the first permanent loop and the second permanent loop.

19. The system of claim 15 wherein the cable is sufficiently stiff to substantially prevent twisting or turning of the barrel rod.

20. The system of claim 15 wherein the cable further comprises a polymer coating for protecting an exterior of the firearm from being scratched.

21. The system of claim 14 further comprising a polymer coating applied to the barrel rod for protecting the barrel of the firearm from being scratched.

22. The system of claim 14 wherein the barrel rod comprises a knurled knob at an end to facilitate pushing, twisting, and turning the barrel rod with fingers.

23. A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of pins configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the pair of pins of the barrel rod.

24. The system of claim 23 wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod;

a spring compressed by the end of the barrel rod;

a first pair of grooves for receiving the pair of pins and for guiding the pair of pins longitudinally along the firing chamber plug;

a second pair of grooves connected transversely to the first pair of grooves for guiding the pair of pins transversely as the barrel rod turns; and

a third pair of grooves connected to the second pair of grooves for seating the pair of pins after the spring pushes the pair of pins into the third pair of grooves, wherein the third pair of grooves is configured to prevent the barrel rod from twisting or turning.

25. The system of claim 23 wherein the barrel rod comprises:

an inner shaft shorter in length than the barrel, the pair of pins protruding from the inner shaft; and

an outer tube comprising a first hole, the outer tube is configured to fit over the inner shaft and to slide and turn freely over the inner shaft, such that turning or depressing the outer tube neither turns nor depresses the inner shaft, the outer tube protrudes from the barrel and permits access to the inner shaft through the first hole such that the barrel rod can be disengaged from the firing chamber plug only by accessing the inner shaft through the first hole with a tool.

26. The system of claim 25 wherein the tool is a hexagonal wrench.

27. The system of claim 23 wherein the barrel rod comprises a knurled knob to facilitate pushing, twisting, and turning of the barrel rod with fingers.

28. The system of claim 23 wherein the barrel rod comprises a polymer covering to protect the barrel from being scratched.

29. A system for locking a firearm, the system comprising:

a barrel rod comprising a pair of balls configured to protrude outward from a longitudinal axis of the barrel rod, wherein the barrel rod is rigid and is

longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the pair of balls of the barrel rod.

30. The system of claim 29 wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod; and

a lip for holding the pair of balls within the firing chamber plug to prevent the barrel rod from disengaging the firing chamber plug.

31. The system of claim 29 wherein the firing chamber plug comprises:

a hole for receiving an end of the barrel rod; and

a channel for seating the pair of balls within the firing chamber plug to prevent the barrel rod from disengaging the firing chamber plug.

32. The system of claim 29 wherein the barrel rod comprises:

an outer tube with a pair of holes in which the pair of balls rest; and

an inner shaft comprising a narrow portion, wherein the inner shaft is configured to occupy and slide within the outer tube and to cause the pair of balls to retract toward the longitudinal axis when the narrow portion is aligned between the two balls, such that the balls retract when the narrow portion is aligned between the two balls when the barrel rod is inserted into the firing chamber plug, and the balls protrude to engage the firing chamber plug when the inner shaft slides back away from the firing chamber plug.

33. The system of claim 32 wherein the inner shaft comprises a push button that comprises a hole and the outer tube comprises a knob, the push button and the knob protrude

from the barrel, the system further comprising a lock configured to be placed through the hole, to abut the knob, and to be locked to prevent the inner shaft from retracting the pair of balls to disengage the barrel rod from the firing chamber plug.

34. The system of claim 32 wherein the outer tube comprises a bottom plug configured to prevent the inner shaft from being pushed outside of the outer tube and wherein the barrel rod further comprises a spring between the bottom plug and an end of the inner shaft, wherein the spring is configured to push the inner shaft outward to cause the pair of balls to protrude from the outer tube.

35. The system of claim 29 wherein the barrel rod comprises a hole, the system further comprising:

a cable comprising a first permanent loop at a first end of the cable and a second permanent loop at a second end of the cable, wherein the cable has a length sufficient to form a third loop between the barrel rod and a trigger guard of the firearm; and

a lock configured to lock together the first permanent loop and the second permanent loop of the cable to lock the third loop formed between the barrel rod and the trigger guard.

36. The system of claim 35 wherein the cable passes through the hole and the lock locks together the first permanent loop, the second permanent loop, and the trigger guard.

37. The system of claim 35 wherein the first permanent loop passes through the trigger guard and the lock locks together the first permanent loop, the second permanent loop, and the hole.

38. The system of claim 35 wherein the cable passes through the hole and the first permanent loop passes through the trigger guard, and the lock locks together the first permanent loop and the second permanent loop.

39. The system of claim 35 wherein the cable further comprises a polymer coating for protecting an exterior of the firearm from being scratched.

40. The system of claim 29 further comprising a polymer coating applied to the barrel rod for protecting the barrel of the firearm from being scratched.

41. The system of claim 29 wherein the barrel rod comprises a knurled knob to facilitate pushing, twisting, and turning the barrel rod with fingers.

42. A system for locking a firearm, the system comprising:

a barrel rod that is rigid and is longer than a barrel of the firearm and is of sufficient length to protrude from the barrel of the firearm; and

a firing chamber plug sized to fit within an ammunition chamber of the firearm and configured to removably engage the barrel rod.